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ABSTRACT

Written in 1973, the document describes the application of Jean Piaget's pedagogical principles to an elementary and secondary social studies curriculum: Social Encounter and Research Curriculum for Humanization (SEARCH). In Part I, it is stressed that SEARCH is the first innovative curricular program that strives to teach the major concepts of social studies at the same time it seeks to structure these concepts into an individualized instructional design based on Piaget. Part II discusses Piaget's pedagogical principles. For Piaget, the role of action lies at the base of a child's development. Also, he maintains that intellectual development follows a fixed and regular sequence. The particular chronological stage of a child determines how he can react to a given experience. Part III describes the premises of SEARCH. Four levels comprise the total program. Level A (ages 5-7) covers the cognitive operation of pre-operational thought. Level B (ages 8-11) is characterized by concrete operations. Level C (ages 12-14) focuses on early formal operations, and Level D (15-18) on formal operations. Content is organized around five psycho-social functions: self-realizing, governing, producing and consuming goods and services, utilizing environments, and generating and interpreting. Each stage contains ten units; each unit contains several activities built around the unit theme. In all units, multimedia materials are the chief means by which instruction takes place. (KC)

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INDIVIDUALIZING THE SOCIAL STUDIES:
AN APPLICATION OF PIAGET'S THEORY

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INDIVIDUALIZING THE SOCIAL STUDIES:

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ABSTRACT

This study examines the question of how Piaget's theory is applicable to an individualized social studies curriculum. Piaget's major pedagogical principles are initially examined and topics such as basic learning patterns and stage sequence, the relationship of affective and cognitive factors in learning, and teacher/student roles are discussed. The study's focus is one of application, namely the Social Encounter And Research Curriculum for Humanization (SEARCH) being developed at Research for Better Schools. How Piaget's theory serves the individualization goal of the SEARCH program is reviewed and findings from developmental testing of SEARCH instructional materials are introduced.

INDIVIDUALIZING THE SOCIAL STUDIES:
AN APPLICATION OF PIAGET'S THEORY

I. Introduction: The Problem

The fact that we are meeting here today acknowledges that Piaget has become an important influence on curriculum in American education. Every curricular area -- science, mathematics, reading and the language arts -- has been affected by Piaget's theory. The social studies is no exception. Taba's Contra Costa County program developed here in California and Bruner's "Man, A Course of Study" are well known for their roots in Genevan research. The important issue is how Piaget's theory is being applied to the curriculum. What ends are served by adapting cognitive theory to the development and implementation of the so-called "new social studies"?

One may argue that applying Piaget to the social studies is a natural step. There have been historical precedents pointing in this direction. From John Dewey's progressivism to the core curriculum of two decades ago, both an activity-based curriculum and an interdisciplinary social studies were logical forerunners of applied cognitive theory (Overton, 1972).

What makes Piaget relevant to social studies in the 1970's? The Social Encounter And Research Curriculum for Humanization, or SEARCH, applies Piaget to social education by emphasizing the individualization of instruction. It is our contention that cognitive-developmental theory, as expressed by Piaget and researched by many international scholars (Kohlberg, 1972), is consistent with the current concern for individualization in curriculum development. SEARCH is the first innovative curricular program that strives to teach the major concepts of the social studies at the same time it seeks to structure these concepts into an individualized instructional design based on Piaget.

To Piaget (1970), learning, or more broadly development, is the result of changing cognitive structures. This development occurs as the child's mental organization becomes a more complex and more efficient representation of the reality which he has actively experienced. Piaget's (1973) emphasis is on action; the child acts upon the objects he observes and in so doing he learns the nature and significance of those objects. He learns as an individual, in terms of the history of his past experience and in terms of the nature of his present activity. In Piaget's theory, the stage of the child's mental development

at any given moment is of major consequence to the quality of his learning at that particular moment. The curriculum must provide for these individual concerns if the ends of learning are to be served. Even more important, an analysis of how the individual's development relates to the structure of the curriculum itself must also be made. Piaget's theory may enlighten such an analysis.

The central problem of this paper thus emerges: How can Piagetian principles be incorporated into an individualized social studies curriculum? The problem is one of application of Piaget's fertile theory. In actuality, this problem has grown out of a curriculum development project currently being conducted at Research for Better Schools, Inc., in Philadelphia. RBS is a non-profit research laboratory known for its various programs in individualizing and humanizing the curriculum. SEARCH is one of the components of RBS's Individualizing Learning Program, a program funded by contract with the National Institute of Education. SEARCH is being developed and tested with a Piagetian base constantly in mind. From selecting the concepts in the disciplines, to setting instructional objectives and producing the actual media of instruction, Piaget's theory and the concern for individual differences both guide

the developers' work. In their experience, a fruitful base for pursuing the analysis mentioned above can be sought. As one of the major developers of SEARCH, I should like to share with you some of our observations and findings in applying Piaget to an individualized social studies curriculum.

II. Piaget: Rationale for a Curriculum

First, we must take a careful look at Piaget's pedagogical principles, reluctant as he may be to state them as dogma. Reference has already been made to the role of action which lies at the base of the child's development. Here Piaget's epistemological roots are exposed, for it is the nature of knowledge as he sees it that determines the child does not merely copy reality, he must operate upon it. Therefore, according to Piaget (1964), thought is the internalization of an operation.

Tied to his view of active participation in learning, Piaget has established an optimum role for the learner, as well as a principal goal of education: "...to create men who are capable of doing new things, not simply of repeating what other generations have done -- men who are creative,

inventive discoverers (Duckworth, 1964)." There is a spontaneous side to active learning, not a mere reflection of facsimile. To Piaget, the child must be able to go beyond information presented in a text or lesson. That is the true characterization of human intellect. The child must see the logic of material but also its greater significance. Moreso, if the lesson is to be meaningful to the student, it must be rooted in something he already knows and is concerned with, yet be dissonant or interestingly incomplete enough that he is motivated to find out more about it. There are then, according to Piaget, both cognitive and affective dimensions to the activity that inspires learning.

The concept of stage is another important principle that is central to Piaget's theory (Inhelder, 1953). Piaget has long maintained that the development of intellect follows a fixed and regular sequence of operations available to the youngster. Although each child may develop at his own individual rate, the sequence of the stages of mental organization through which his activity will take him is the same for all individuals. Various research studies have corroborated this principle of Piaget's theory.

Of prime importance to Piaget's concept of stage is the

fact that the various stages are characterized by the nature of their mental operations or their underlying cognitive structure. It is not merely chronological time nor the outward manifestation of an experience that is significant to a child's learning. Rather, the stage a child is in at a chronological moment determines the ways in which he can react to a given experience. Piaget's stages are adaptive; they indicate structures already available by which the child can assimilate new data. The stages are also dynamic; they indicate the potential for change in mental structures by which the child will accommodate and learn the new data.

Therefore, at different stages, Piaget suggests the child sees the same experience with different frames of reference or meaning. Given a measure of freedom to exercise fully the operations of a specific stage, the learner will integrate or internalize an experience by bringing the operations available to him to bear upon that experience. Eventually, by means of this intellectual interaction, the operations themselves will be transformed into a new stage, one characterized by more complex operations.

I will assume that you are familiar with the four main developmental stages suggested in Piaget's theory. They have

received extensive description in the literature. The sensori-motor period provides the basic model of adaptation and the establishment of an object concept in the first two years of a child's life. Pre-school and primary education begin when the pre-operational stage influences the student. Piaget underlines the importance, if not dominance, of perceptual development during this period: the significance of imagery, the slow emergence of symbolic language, the largely self-centered orientation of the five to seven year old who believes what he sees rather than what he knows. In the next period, the direct action of concrete operations is necessary, in Piaget's viewpoint, to establish the conservation patterns in time, space, and causality which are the major mental feats of the developing child between the approximate ages of eight and eleven. This middle school child sees what he knows; the concrete images reinforce the logical patterns he now discerns. If permitted, the maturing adolescent in the next state will begin to predict from these patterns, and in his prediction formal operations will be born.

Upon examining stage development, one is struck by the myriad of influences that an individual child doubtlessly brings to his changing mental structures: the role of motor control

and muscular development in the first period; the impact of pattern recognition, contrast, symmetry, and memory on the second; the significance of manipulation, coordination, and differentiation on concrete experience; the importance of language development, divergent behavior, and confident risk-taking at the formal level. Piaget's theory offers a new way, a much fuller explanation of the genesis of thought. Perhaps he enables the educator for the first time to view the child's mind as it actually is, or as it really develops, rather than in the monolithic what-it-ought-to-be form which has dominated education for so long. Educators have come to realize through Piaget's theory that the child gradually develops into a thinking adult. Unlike Athena, children are not born fully capable of formal operations. Inevitably, this realization will influence the relationship that exists between student and teacher in the educational setting.

In one sense, Piaget's model of an ideal student is "a doubting Thomas." For, he suggests, "the second goal of education is to form minds which can be critical, can verify and not accept everything they are offered (Duckworth, 1964)."

Piaget takes issue with Dante who unquestioningly accepted Virgil as the fount of all wisdom. To put it into Bruner's

words, teaching is not telling -- that is to place at the level of rote memorization man's most creative role. Rather, according to Piaget, it is the teacher's task to facilitate learning in the sense of helping the student fully realize his own cognitive operations. By and large, it is the curriculum which provides the data upon which the student will act.

We need pupils who are active, who learn early to find out by themselves partly by their own spontaneous activity and partly through material we set up for them...This is attained by a mixture of discovery and subtly controlled structure, leading through the natural succession of phases (quoted in Hechinger, 1972).

We come here to the structure of the subject matter itself and the relationship between this structure and instruction. In traditional education, the teacher is supposedly an expert in some area of knowledge in which society or an established council has deemed it necessary the student learn. Given the principles of education we have just discussed, the role of action and the importance of stage operations, what happens to this traditional view and the disciplines of knowledge in a Piagetian based teacher-student relationship?

To answer this question it is necessary to point out that Piaget depicts knowledge as a molar entity, synonymous with conceptual wholes. Such a position enables Piaget (1970) to

speak of interdisciplinary relationships among subjects. The division of compartmentalized subject fields within knowledge is a scholarly convenience, according to Piaget, perhaps a limitation needed for realistic research, but not an intellectual necessity. Piaget is moved more by the parallel structures or patterns cutting across the disciplines than with fragmentary conceptualizations of adult thought in varied academic fields (Presseisen, 1971). For purposes of instructing young minds, Piaget concentrates on the significance of a single logic basic to all knowledge, rooted in a uniform sequence of cognitive operations. The age old curriculum dichotomy of content or process is obliterated by Piaget's view of developing knowledge. In his view, it is the relationship between content and process, or as Kohlberg calls it Piaget's "interactionist epistemology," that should become the focus of the curriculum.

Thus, in the social studies Piaget asks such questions as, "How does the child develop concepts of history or anthropology?" Rather than to speculate on the nature of history or anthropology or any other discipline, Piaget assigns the instructor the task of studying how his students learn a particular subject. This is not to say a teacher should not be concerned with the fine

points of the content. Knowing more about a discipline can only help him relate it to the process base. Even the disciplinarian, the historian or the anthropologist, can learn by observing the cognitive operations demanded by his subject field; he can more fully understand through these operations the theory of his intellectual pursuit. Piaget suggests that what is significant, however, is not the particular answer a student gives to a query in the subject matter, but the question the child thought he was answering. Therein lies the real relationship between the learner and the subject. Error in the student's response to a particular question represents the lack of cognitive communication among the student, the curriculum, and his teacher. The teacher's task is to bring these three factors into clearer communication. Once more, it is individual development upon which Piaget's theory centers. For the individual child's capability at the given moment is the most significant factor of the instructional exchange. Above all, it is this development that is key to writing a curriculum.

III. An Individualized Program: SEARCH

Let us now turn to the concern for individualizing instruction we mentioned earlier. According to Scanlon and

Brown (1971), individualization stems largely from an appreciation of differences among individuals. Individualization also arises from recognizing several manifestations of the need to personalize learning. What are these manifestations?

Individualization must be concerned with the rate by which a student learns, the pace he maintains, and the time he requires to work through a problem. At the same time, individualizing a curriculum requires that various cognitive levels and alternative modes of instruction be available to the learner. Phillips (1972) points out that a curriculum based on Piaget and serving the individual student, which he agrees Piaget would want, should provide each student with his own equipment for learning so that he can proceed in his direction and at his own pace. This suggests acceptance of the concepts self-instruction, self-initiation, and self-direction in learning, for one can hardly expect the teacher to be the primary mover of a classroom of twenty or more students, each studying different materials with a different array of multi-media devices to aid learning. Lastly, individualization implies testing techniques which permit assessment in terms of particular goals or specific objectives that are geared both to the pace of the individual's learning and the appropriate cognitive

level at which he operates.

As I mentioned earlier, SEARCH is an individualized curriculum in social education that is Piaget based. We are in the process of wrangling with the problems of developing and testing an elementary program that provides for all the individualizing criteria just mentioned. Needless to say, our problems are all economy sized. But we feel the attempt is well worth the effort. With the opportunity to test our material in actual classrooms while we write the lessons, with the role of creating the media we use, as well as having an appraisal staff to critique both our students and ourselves, we are getting some very interesting returns on the viability of our basic design. Briefly, we are trying to create a model of what Glaser (1972) would call an adaptive educational program emphasizing the process variables central to Piaget. I shall have to leave the final judgment of our success up to you.

First, I'll explain how we have organized our curriculum. SEARCH organizes the thirteen years of a student's educational experience around developmental levels and life functions. Four Levels are premised in the total SEARCH program. Each Level is designated by the approximate age range and the gross cognitive operations characteristic of students within that

range. Level A covers the five to seven year period, the cognitive operation is that of pre-operational thought. Level B includes the approximate ages of eight to eleven and is characterized by concrete operations. The SEARCH project concentrates on developing the elementary program in the next three years, but our design accounts for the period beyond elementary education, as well. Level C marks the ages twelve to fourteen and will focus on the transition to early formal operations, while in Level D the fifteen to eighteen year age group will be included with formal operations as the cognitive basis of instruction.

In addition to cognitive dimensions, and recognizing that Piaget maintains that affective concerns are never independent of cognition, we have also characterized the social parameters of each Level in SEARCH. Initially, in Level A the child is primarily self-centered in his social experience. Although Piaget has shunned away from using his term "ego-centric," the pre-operational child still initially sees the world in which he lives through his personal vantage point. So we have constructed his social experience in our first Level. In Level B the child will become aware that others have views both different from and similar to his own, and he will become

cognizant of the influence of group orientations on his own views. By Level C the child will widen his social perspective and see the possibilities of inter-group relationships and conflicts in his much more complex world. And finally, when he can think hypothetically and predictively, he will become conscious of the ideational relationships of a complex society with values and mores as varied as the total possibilities of the human condition. It should be noted, these are gross organizers for a curriculum. Research does not permit us at this time to be more exact, nor more explicit. What should be underlined is the fact that the organizers come from theories of development, Piaget's and to some extent Erikson's, which describe the child as he is and becomes, not merely as he ought to be.

How do we account for content in the SEARCH design? Content in SEARCH is organized around five psycho-social functions. These five functions are 1) Self-Realizing, 2) Governing, 3) Producing and Consuming Goods and Services, 4) Utilizing Environments and 5) Generating and Interpreting Ideas and Events. The functions reflect the fact that human action and awareness begin with a personal focus and expand, as cognitive development, toward a focus on all

humanity. The functions are organizers, too. SEARCH has chosen to be an interdisciplinary social education program, organizing material around concepts from the various social sciences and history, but emphasizing a dynamic approach to knowledge. This approach strives to have the student encounter the material he studies in the daily exchange between himself and his personal, social, and cultural environments. The emphasis in SEARCH is thus not to be discipline based but activity oriented. Given a problem situation, or a concept to be mastered, we must write an activity that will cause the student to do something about his learning. The activity is to be written so that the student will work at his cognitive level on the given problem. Hopefully, the activity will also be written to make it possible for the student to experience maximum flexibility and choice in pursuing his interests and concerns. This means the student must manipulate materials himself, and with each SEARCH lesson comes an appropriate materials kit that presents the perceptual as well as the conceptual base to his learning.

In SEARCH, Levels are further divided into instructional time segments called Stages. A Stage roughly corresponds to a grade in conventional schooling, but since cognitive opera-

tions are kept constant across Levels, we view SEARCH as a non-graded program. There are ten Units in each Stage of SEARCH, thus the three Stages in Level A represent thirty Units. We have mandated that the five Functions appear throughout a Level to give the integrated basis of a social education program, therefore in any one Stage there are approximately two Units based on each Function.

What does a SEARCH Unit look like? A SEARCH Unit contains several activities built around the Unit theme which, in turn, relates to the overall Function. In Level A, each Unit represents approximately nine days of instructional time, a half hour per day, including time for testing and recording student response. Each Unit includes a generalization, three concepts, and three objectives for instruction. Each Unit of SEARCH has been developed according to an original management system consisting of three Phases: Encounter, Research, and Action. Encounter consists of activities that introduce a Unit and concentrate on the development of the child's image and language for the material of the Unit. One can see Piaget's influence on this initiating entry into a lesson. Research emphasizes the active investigation and exploration of a particular problem. Here Piaget would find the manipulative

examination by which mental structures can be expanded. And finally, Action asks the child to produce and demonstrate his knowledge of the concepts of the Unit. Practice follows acquisition of a concept, and the child is encouraged to share his learning with his peers in a mode of exchange that is not merely verbal and in a way that is both personal and creative as well.

Curriculum developers face the problem of how to test and properly pace their lessons. In trying to individualize SEARCH, we have compounded that problem. I can only give you our tentative solution to a management design, for we are still very much concerned with the problem. We have set a diagnostic measure at the beginning of a SEARCH Unit. This measure determines if a student is ready for the Encounter or Research Phase of the Unit. If his language and imagery suffices, the student can skip Encounter and go directly to Research. In both Encounter and Research there are two activities from which the child can choose as he wishes. These activities are instructionally equivalent, they differ only in media. We have attempted to make the activities as independent of teacher intervention as possible. Much of the instruction is handled by cassette tape, as in Level A we do not presume a reading ability on the

student's part. We are looking into the possibility of making the student a more self-correcting learner, independent of the teacher for praise or reprimand. And what role do we assign to the teacher? The task of facilitator: to see if the student is having difficulty in a Research activity and needs recycling back to an Encounter lesson; to monitor the Action phase and to keep record of student performance; to help organize the multi-media materials for optimum use and encourage students in selecting new Units as they complete earlier ones.

Thus far we have been moderately successful in integrating social studies concepts with cognitive operations. Much of Level A material deals primarily with Piaget classification tasks, one-to-one correspondence of properties, multiple properties in a set, beginning class inclusions. In a Unit on feelings in the Self-Realizing Function, children at the Kindergarten Level, SEARCH's Stage I, learn to classify facial expressions in terms of emotional feelings being studied. Simultaneous membership in two classes teaches a second grader that one man can be both a producer and a consumer of goods and services. In all Units of Level A, the multi-media materials -- games, puzzles, graphics, slides and tapes -- have been the chief means by which instruction takes place. The materials

have been enthusiastically received by the children. I might say that they have helped us convince the teachers, too, of the innovative worth of an individualized social studies program, no doubt evidence of the fact that the enjoyment of concrete operations persists into adulthood.

We are by no means finished with our appointed task. In some ways, we have merely found new questions and new problems. But applying Piaget's theory to an individualized social education program seems viable and very desirable. Our SEARCH staff is assured that social studies will never be quite the same.

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